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(54) Title: METHODS FOR ENHANCED VIRUS-MEDIATED DNA TRANSFER USING MOLECULES WITH VIRUS- AND CELL-BINDING DOMAINS

(57) Abstract

A method to increase the efficiency of transduction of hematopoietic and other cells by retroviruses includes infecting the cells in the presence of fibronectin or fibronectin fragments. The fibronectin and fibronectin fragments significantly enhance retroviral-mediated gene transfer into the cells, particularly hematopoietic cells including committed progenitors and primitive hematopoietic stem cells. The invention also provides improved methods for somatic gene therapy capitalizing on enhanced gene transfer, hematopoietic cellular populations, and novel constructs for enhancing retroviral-mediated DNA transfer into cells and their use.